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ABSTRACT

A joint research project between an office of institutional research and the education department at North Carolina Central University (NCCU) is described. The study focuses on factors that might affect the scores of NCCU students on the National Teacher's Examination (NTE). The project enabled the education department to begin counseling NCCU students regarding their probable performance on the NTE and has given the department a 3-year start in planning for the use of the Scholastic Aptitude Test as a screening test. The project also offered the research, evaluation, and planning office the opportunity to build a database to test the Myers Briggs Type Indicator (MBTI) as a predictor of success in a teacher education program. The project was part of a larger research effort involving other universities, and the data on NCCU students provided input from a predominantly black population to a collection of data on a predominantly white population. The MBTI is a personality type indicator that classifies individuals according to their personality characteristics and includes the following four indices: extraversion-introversion, sensing-intuition, thinking-feeling, and judgment-perception. One research study concerning the value of the SAT scores and the MBTI dimensions in predicting NTE common examination scores indicated that the verbal and mathematics scores of the SAT accounted for 52 percent of the variance in NTE scores of 53 students, and that the sensing-intuiting dimension of the MBTI accounted for a significant portion of the variance in NTE common scores. Beginning in 1982 the research results will be used to counsel students regarding academic planning, change of major, and test-taking strategies. (SW)

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AN EXAMPLE OF A COOPERATIVE PROJECT BETWEEN INSTITUTIONAL RESEARCH AND A UNIVERSITY DEPARTMENT

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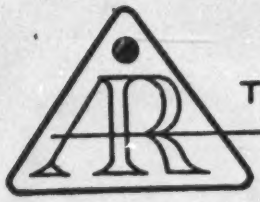

THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

This paper was presented at the Twenty-Second Annual Forum of the Association for Institutional Research held at the Denver Hilton Hotel in Denver, Colorado, May 16-19, 1982. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum papers.

D. R. Coleman, Chairman
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ABSTRACT

The paper describes a joint research project between an office of institutional research and a university department. The value of the project to both groups and to the university is discussed. Specific examples of the use of the results by the department in counseling students and in preparing to meet state accrediting criteria are given along with examples of the use of the results to further theory and methodology in institutional research.

AN EXAMPLE OF A COOPERATIVE PROJECT BETWEEN INSTITUTIONAL RESEARCH AND A UNIVERSITY DEPARTMENT

One of the major problems in institutional research is finding the time and resources to initiate research projects that are of special interest to a particular department, of value to the college or university, and that, at the same time produce theoretically meaningful research. This paper will describe a project that meets these criteria.

In 1977, two education department faculty members and two members of the institutional research office at North Carolina Central University (NCCU) began a study of various factors that might affect the scores of NCCU students on the National Teacher's Examination (NTE).

This project was of particular interest to NCCU for two reasons. First, the State Department of Public Instruction in North Carolina requires teachers to make a minimum score on the NTE before they can be certified to teach in North Carolina, and these minimum scores were raised in 1980 and 1981 and will be raised in increments for the next two years. The implications of these increases are serious: A student who does not make the minimum score cannot teach in North Carolina. The results, in the long run, will be correspondingly severe for NCCU, since any program which consistently fails to produce students who can be certified will face problems in enrollment and with state accreditation. Second, a Quality Assurance Plan has been submitted to the State Board of Education. This plan includes a variety of screening devices.

The current project has enabled the Department of Education to begin counseling NCCU students regarding their probable performance on the NTE and

has, in addition, given the department a three-year head start in planning for the use of the SAT as a screening test. The joint project also offered the Office of Research, Evaluation, and Planning at NCCU the opportunity to build a data base to be used to test the Myers Briggs Type Indicator (MBTI) as a predictor of success in a teacher education program. This project became one aspect of a larger research effort that involved researchers from several universities. Some results of this project have already been reported elsewhere (Reichard and Uhl, 1979; Pratt, Uhl, DeLucia and Roberts, 1981; and Uhl, Pratt, Reichard and Goldman, 1981). The data on NCCU students added the dimension of research on a predominantly black population to an extensive collection of data on a predominantly white population.

Pratt, DeLucia, and Uhl (1979) found that SAT scores were good predictors of NTE common examination scores for NCCU students. Another study (Ayres, 1980) reported that the total SAT score was an unusually good predictor (R-Square=.77) of NTE common examination scores for students from all state supported education programs in North Carolina.

McCaulley (1974) has reported that students who are classified as Sensing types (on one of the four dimensions of the MBTI) tend to do poorly on timed tests as compared to Intuitive types. A previous study based on this data (Pratt, et al, 1981) indicated that NCCU students classified as Sensing types did, in fact, score significantly lower than Intuitive types on the common portion of the NTE.

The Myers-Briggs Type Indicator

The MBTI is a personality type indicator. The purpose of the instrument is to classify individuals according to their personality characteristics. The MBTI was not designed to identify or diagnose personality disorders; rather, Isabella Briggs Myers and Katherine C. Briggs developed the instrument to implement Carl G. Jung's theory of personality type. In accordance with Jung's theory, the instrument classifies individuals on each of four indices. The results are used to identify the person's bi-polar preferences on the four dimensions or indices. These four indices are:

1. Extraversion-Introversion (EI)--This index is designed to reflect whether the person is an extravert, oriented primarily to the outer world or an introvert with focused perception and judgment on an inner world of concepts and ideas.
2. Sensing-Intuition (SI)--This index is designed to reflect the individual's preferred use of the perceptual process. Those classified as sensing types tend to become aware of things directly through one or another of the five senses while those classified as intuitive types tend to enrich perceptions with ideas or associations.
3. Thinking-Feeling (TF)--This index is designed to reflect the person's preferred use of the judging process, i.e. whether the individual relies primarily upon thinking, which discriminates impersonally between true and false,

or primarily upon feeling which discriminates between valued and non-valued.

4. Judgment-Perception (JP)--This index reflects whether the person prefers to rely on the judging process or upon the perceptual process.

The combinations produced by the two poles of each of the four dimensions lead to sixteen distinct personality types (ESTJ, ESTP, INFP, etc.).

Data and Methodology

Beginning in 1976, Scholastic Aptitude Test (SAT) and National Teacher's Examination (NTE) scores were collected for students enrolled in the student teaching block at NCCU. Students enrolled in this block have completed all other education course requirements for teacher certification. In the initial analysis, completed in 1978 and reported in Pratt, DeLucia, and Uhl (1979), NTE and SAT scores were available for 146 students who had been enrolled in the program between 1976 and 1978.

Multiple regression analyses were used to produce an equation for NTE common examination scores. This formula was:

$$\text{NTE Common Scores} = 211.58 + .5724\,(\text{SATV}) + .2304\,(\text{SATM})$$

The R-square for this equation was .393, indicating that almost 40% of the variance in the NTE common scores was accounted for by the two SAT scores.

In 1981, Pratt, Uhl, Roberts, and DeLucia added Myers-Briggs Type Indicator scores to the NTE and SAT data collected for the continuation of the previous study. In general, the SATV and SATM scores continued to be the best

predictors of NTE common scores, accounting for 52% of the variance in the NTE scores of the 53 students for whom complete data was available. The sensing-intuiting dimension of the MBTI was the only dimension which accounted for a significant portion of the variance in NTE common scores. Alone, this dimension accounted for 8% of the variance. The judging-perceiving dimension of the MBTI increased the R-square from .52 to .56. The SN dimension did not significantly increase the R-square, probably because the SN dimension is highly correlated with both SAT scores.

During the 1981-1982 academic year, data for 19 additional students were added to the file. As before, the SN dimension was the only one of the four MBTI dimensions to significantly contribute to the variance in NTE common examination scores.

In addition to examination of the value of the SAT scores and of the various MBTI dimensions in predicting NTE common examination scores, the formula developed from the file containing data on students between 1976-1978 was validated using the 1980-1982 groups. The correlation of the predicted NTE common scores (computed using the formula given above) with the actual NTE common scores of the same students was .57. A correlation of this magnitude accounts for 33% of the variance between the two sets of data. This indicates that the initial formula is still a useful and valid tool for predicting the NTE common examination scores of NCCU students.

Conclusions and Implications

Some of the benefits of the project to the university and to the education department are now being realized; others are still in the planning stage.

Beginning in the fall of 1982, the results will be used to counsel the students in the following ways:

1. Academic Planning. Very early in a student's academic career, counseling will begin . The student's program and his specific education courses will be planned using SAT scores as predictors. Some options might include extra courses, more courses in a certain field, tutoring sessions, or extra seminars. A student would then know very early that his course of study in education might be lengthened. Early examination of an academic program will benefit a student since more alternatives can be explored, leading to a truly individualized program.
2. Change of major. If a student's predicted scores fall well below an acceptable level, the student may be counseled out of the teacher education program. The nature of an elementary education program requires that a student take a few courses in several of the academic areas (language arts, sciences, mathematics, fine arts, social studies, health, and physical education). If a student is well into the program, it is difficult to change majors without essentially starting over. Therefore, if a student could be counseled early as to his predicted success in the program, more alternatives would be available for exploration.

3. Test-taking strategies. Plans are being developed to hold test-taking seminars for students. Knowledge of the SAT scores of individual students will help faculty members involved with the NTE preparation. For example, if a student's SAT scores are low, while his grades are high, there is an obvious discrepancy. This could be interpreted as indicating a need for better test-taking strategies and skills for that individual student. Certain features of the MBTI scores may help in developing test-taking strategies for the students. Since students who are classified as Sensing types may score lower on timed tests such as the NTE because of a tendency to read each question carefully several times (McCaulley, 1974), knowledge of a student's score on that dimension may affect the way in which that student is taught to approach tests. In addition knowing whether a "sensing" student is more of a thinking type or a feeling type could be a crucial factor in the advice he would receive. While the thinking type would deal with facts on a basis of impersonal analysis, a feeling type would be more likely to handle facts on the basis of personal values. Thus, the feeling type may need more strategies for handling facts in problem solving situations than the thinking type.

When grouping students in seminar sessions, knowledge of individual types may also be helpful. A heterogeneous

grouping of personality types would be preferred because of the mutual usefulness of opposite types in association with each other. For instance, an intuitive type needs to be grouped with a sensing type to bring up pertinent facts while the sensing type needs an intuitive type to help him see the possibilities of what can be done with the facts of a situation.

There are other benefits accruing from this project which are less immediate, but no less real. NCCU's counseling program may also constitute an initial step in preparing for the state screening program. In October 1978 the state of North Carolina adopted the Quality Assurance Program. Basically the program calls for "a systematic, continuous and extended approach to quality assurance in initial programs of teacher preparation and continuing conditions of service for professional personnel". (Taylor, 1979, p.5)

The essential elements of the Quality Assurance Program (QAP) include: (1) Admissions; (2) Core courses in General Education; (3) Professional program courses; (4) Field experiences; and (5) the Exit Evaluations.

Entrance into teacher education programs will be reassessed. Use of the SAT scores as possible predictors will be examined by the state through the appropriate agencies. This could give potential teachers a realistic picture of their career expectations.

During the first two years of his academic career, a student would take a series of courses that represent a common core of "knowledges, skills, attitudes, and ideals which every citizen should possess". (Taylor, 1979, p. 6) At this point in a student's career, there would be a pre-screening objective assessment given to determine full admission to a teacher education

program. The state also mentioned screening of potential teacher candidates in the areas of scholarship, personal and social fitness, physical and mental health, and suitability to area of interest. (Taylor, 1979, p. 6)

Each institution will develop its teacher education program with competencies necessary for a competent and effective teacher. More cooperative programs between universities and school systems will be needed for effective field experiences. At the end of the teacher education program, a candidate will be involved in a comprehensive exit assessment. Included before initial certification are a proposed North Carolina Criterion-Referenced Test, the National Teachers Examination, and a cooperative evaluation of field experiences (Taylor, 1979).

In effect, NCCU will have three to four years to prepare for the use of the SAT as an initial screening device; certainly significantly more preparation time than many other institutions in the system. Because members of the education department are involved in the project, implementation of the counseling strategies and preparation for the screening tests have proceeded at a more rapid pace than might have been the case otherwise.

A sequence of early field experience courses, already in place, would allow counseling and screening components to be included. The following table gives a broad overview of the existing field experience program at NCCU, the proposed counseling sequence, and the state's proposed Quality Assurance Program's assessment schedule. (See Table 1)

The outcomes of the joint project described in this paper have obviously been quite beneficial to the department and the university as well as to the students who benefit from the counseling. In addition, however, this project

has given the Office of Research, Evaluation, and Planning the opportunity to collect data that adds to the theoretical and methodological base of the field of institutional research. The MBTI data on the education department students will be combined with data from the nursing department, yielding a data base of over 200 students. With a base of this size, a more in-depth study of the MBTI in a predominantly black situation can begin.

TABLE I

FIELD EXPERIENCE SEQUENCE

FRESHMAN	SOPHOMORE	JUNIOR	SENIOR
Orientation to Elementary Education	Teacher Aide Activities	Teacher Association Activities	Student Teacher
Observation in Schools	In Schools-helping as an aide (2 hours/week)	In schools-teaching small groups (2 hours/week)	Full time student teaching (8-9 weeks)
Screening tests Speech and Hearing Communication Skills Personality Computation Skills	Communication skills (oral and written)	Communication skills (oral and written)	
	Video taping	Video taping-teaching skills practice	
			NTE Seminar

PROPOSED COUNSELING SEQUENCE

Early Counseling (use predictor for NTE common)	Counseling Input from public school teacher	Counseling Input from another teacher	Counseling Input from cooperating teacher
(Above screening test results are available)	Self-elimination	Self-elimination	Choose non-certification route

QUALITY ASSURANCE PROGRAM ASSESSMENT

SAT Scores for Admission	Early Screening	NTE

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